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TRANSMITTAL FORM

(to be used for all correspondence after initial filing)

Application Number	08/709,930
Filing Date	September 9, 1996
First Named Inventor	GREEN, PHILIP S.
Group Art Unit	2786 / 2125
Examiner Name	GARLAND, STEVEN
Total Number of Pages in This Submission	
Attorney Docket Number	00287S-004820US

ENCLOSURES *(check all that apply)*

- ☐ Fee Transmittal Form
  - ☐ Fee Attached
- ☒ Copy of Amendment / Reply
  - ☒ After Final
  - ☐ Affidavits/declaration(s)
- ☐ Extension of Time Request
- ☐ Express Abandonment Request
- ☐ Information Disclosure Statement
- ☐ Certified Copy of Priority Document(s)
- ☐ Response to Missing Parts/ Incomplete Application
  - ☐ Response to Missing Parts under 37 CFR 1.52 or 1.53
- ☐ Assignment Papers *(for an Application)*
- ☐ Drawing(s)
- ☐ Licensing-related Papers
- ☐ Petition
- ☐ Petition to Convert to a Provisional Application
- ☐ Power of Attorney, Revocation Change of Correspondence Address
- ☐ Terminal Disclaimer
- ☐ Request for Refund
- ☐ CD, Number of CD(s)
- ☐ After Allowance Communication to Group
- ☐ Appeal Communication to Board of Appeals and Interferences
- ☐ Appeal Communication to Group *(Appeal Notice, Brief, Reply Brief)*
- ☐ Proprietary Information
- ☐ Status Letter
- ☒ Other Enclosure(s) *(please identify below)*:
  - Request for Acknowledgment of Timely Filing
  - Copy of Communication from PTO of September 30, 2002
  - Fax return-receipt of Fax-filed Amendment After Final
  - Return Postcard

Remarks The Commissioner is authorized to charge any additional fees to Deposit Account 20-1430.

SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT

Firm and Individual name	Townsend and Townsend and Crew LLP MARK D. BARRISH REG. NO. 36,443
Signature	
Date	2 DECEMBER 2002

CERTIFICATE OF MAILING

I hereby certify that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to: Commissioner for Patents, Washington, D.C. 20231 on this date:

Typed or printed name	NANCY PIZZO		
Signature	Nancy Pizzo	Date	12/02/02

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PA 3268399 v1

PATENT

Docket No.: 00287S-004820US
Client Ref. No.: P-3026

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of:	
PHILIP S. GREEN	Examiner: GARLAND, STEVEN
Application No.: 08/709,930	Art Unit: 2786
Filed: September 9, 1996	
For: SURGICAL SYSTEM	**Request for Acknowledgment of Timely Filing**

Assistant Commissioner for Patents
Washington, D.C. 20231

Sir:

Applicant requests that the Amendment under 37 C.F.R. §1.116 filed on November 27, 2002, be acknowledged as having been filed timely.

On September 30, 2002, a Communication was received from the U.S. Patent & Trademark Office (USPTO) for the subject application, and a copy of that Communication is attached as Exhibit A. The Communication sets a deadline of two months (i.e., November 30, 2002) for filing of a response. The Communication also indicated that the fax number for the appropriate USPTO organization is (703) 746-7239, and that "after final" faxes are to be sent to fax number (703) 308-7238.

Applicant diligently prepared and faxed an Amendment After Final for the case on November 27, 2002. Unfortunately, the fax number given in the Communication for "after final" faxes was not answered by a fax machine on November 27, 2002, and

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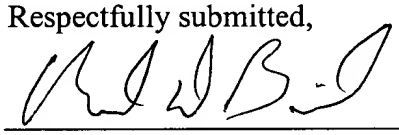
was instead (and still is) directed to the voice mailbox of "Odessa Owen". Applicant therefore fax-filed this Amendment After Final at the appropriate USPTO fax number for the art unit as given in the Communication (fax number - (703) 746-7239). A copy of the Amendment After Final, with the USPTO Auto-Reply Facsimile Transmission Acknowledgment, is attached as Exhibit B.

Applicant requests that the Examiner verify that the §116 Amendment After Final was timely filed. This Request is filed on Monday, December 2, 2002. As the deadline for filing of the Amendment After Final fell on Saturday, November 30, 2002, the attached Amendment After Final would be (and is) timely filed even if the fax-filed documents of November 27, 2002 were defective.

CONCLUSION

If the Examiner believes a telephone conference would expedite prosecution of this application, please telephone the undersigned at (650) 326-2400.

Respectfully submitted,



Mark D. Barrish
Reg. No. 36,443

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Tel: (650) 326-2400 / Fax: (415) 576-0300
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Atty Docket No. 00287S-004820US

PTO FAX NO.: 703/ 308-7238

ATTENTION: Examiner GARLAND, STEVEN
TELEPHONE NO.: 703/ 305-9759

Group Art Unit 2125

OFFICIAL COMMUNICATION FOR THE PERSONAL ATTENTION OF

EXAMINER GARLAND, STEVEN

CERTIFICATION OF FACSIMILE TRANSMISSION

I hereby certify that the following document(s) in re Application of PHILIP S. GREEN, Application No. 08/709,930, filed September 9, 1996 for SURGICAL SYSTEM is being facsimile transmitted to the Patent and Trademark Office on the date shown below.

Number of pages being transmitted, including this page: 14

Dated: November 27, 2002 Nancy Pizzo

Nancy Pizzo

Document(s) Attached

1. Transmittal Form
2. Amendment after Final (12 pages)

PLEASE CONFIRM RECEIPT OF THIS PAPER BY RETURN FACSIMILE AT (415) 576-0300

TOWNSEND and TOWNSEND and CREW LLP
Two Embarcadero Center, 8th Floor
San Francisco, CA 94111-3834
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Fax: 650-326-2422

FA 3264858 V2

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(to be used for all correspondence after initial filing)

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First Named Inventor	GREEN, PHILIP S.
Group Art Unit	2786
Examiner Name	GARLAND, STEVEN
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- ☐ Proprietary Information
- ☐ Status Letter
- ☒ Other Enclosure(s) *(please identify below):*
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Remarks The Commissioner is authorized to charge any additional fees to Deposit Account 20-1430.

SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT

Firm and Individual name	Townsend and Townsend and Crew LLP MARK D. BARRISH Reg. No. 38,443
Signature	
Date	27 NOVEMBER 2002

CERTIFICATE OF MAILING

I hereby certify that this correspondence is being sent by FACSIMILE to **EXAMINER STEVEN GARLAND**, at **FAX NO. (703) 308-7238** on this date:

Typed or printed name	NANCY PIZZO		
Signature	Nancy Pizzo	Date	27 NOVEMBER 2002

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PA 3267720 v1

I hereby certify that this correspondence is being delivered by FACSIMILE to EXAMINER GARLAND at FAX NO.:

(703) 308-7238

On: NOVEMBER 27, 2002

By: NANCY PIZZO

AMENDMENT UNDER 37 CFR 1.116 EXPEDITED PROCEDURE – EXAMINING GROUP 2125

PATENT

Attorney Docket No.: 00287S-004820US
Client Ref. No.: P-3026

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of:

PHILIP S. GREEN

Application No.: 08/709,930

Filed: September 9, 1996

For: SURGICAL SYSTEM

Examiner: GARLAND, STEVEN

AMENDMENT UNDER 37 CFR 1.116 EXPEDITED PROCEDURE - EXAMINING GROUP 2125

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PETITIONS OFFICE

Box AF
Assistant Commissioner for Patents
Washington, D.C. 20231

Sir:

In response to the Final Office Action mailed July 19, 2000, and pursuant to the return of the subject application to *ex parte* prosecution (noted in the Communication of September 30, 2002) after the Board entered final judgment in Interference Nos. 104,643, 104,644, and 104,645, please amend this application as follows:

IN THE CLAIMS:

Please amend claims 118, 123, 138, and 141; please cancel claims 139 and 144; and please add claims 161 and 162, as follows.

Applicants note that the highest numbered claim previously submitted during *ex parte* prosecution (prior to the interferences involving this application) was claim 151. Applicants have herein avoided the use of claim numbers 152 through 160 so as to avoid confusion with claims proposed to be added during the interferences.

118. (Amended) The system of claim 138, wherein the input device has a handle, and

wherein movement at the input device produces a proportional movement of the surgical instrument.

123. (Amended) The method of claim 115, further comprising:

1) providing a first articulate arm, a controller and an input device which receives input commands, the first articulate arm in electrical communication with the controller and the controller in electrical communication with the input device;

2) cutting at least one incision into a patient;

3) attaching the surgical instrument to the first articulate arm, the surgical instrument having a shaft supporting the surgical instrument tip;

4) inserting said surgical instrument into the patient through the at least one incision such that a first portion of the shaft is outside the patient and a second portion of the shaft is inside the patient;

5) generating movement commands to move said surgical instrument in accordance with a surgical procedure being performed, wherein said first articulate arm moves said surgical instrument in accordance with the movement commands such that said first portion of the shaft and said second portion of the shaft move; and

6) removing the surgical instrument from the patient.

138. (Amended) A system that allows a user to control a movement of a surgical instrument, wherein the surgical instrument is coupled to a display device that displays an object, comprising:

a mechanism that moves the surgical instrument, said mechanism having an original position and including a first linkage arm coupled to the surgical instrument and a first actuator which can rotate said first linkage arm and the surgical instrument in a plane perpendicular to a first axis, said first actuator being coupled to a linear actuator which can translate said first linkage arm along an axis parallel with the first axis;

an input device that receives a command to move the surgical instrument in a desired direction relative to the object displayed by the display device; and,

a controller that receives said command to move the surgical instrument in the desired direction, computes a movement of said mechanism based on said command and the original position of said mechanism so that the surgical instrument moves in the desired direction, and provides output signals to said mechanism to move said mechanism said computed movement to move the surgical instrument in the desired direction commanded by the user.

141. (Amended) The system as recited in claim 138, wherein said controller is a computer which receives input signals from said input device and provides output signals to said controller to move the surgical instrument.

161. (New) The method of claim 123, further comprising:

inputting the commands by moving a handle, the handle supported by an input linkage and having a sensor, wherein the surgical instrument comprises an articulable surgical instrument having a wrist joint coupling the shaft to the surgical instrument tip, wherein said first articulate arm moves said surgical instrument while the first portion of the shaft is outside the patient and the second portion of the shaft is inside the patient by rotating the shaft about an axis of the shaft, by translating the shaft along the axis of the shaft, and by articulating the wrist joint within the patient, the surgical instrument movement proportional with the handle movement; and

operating a joint coupling a first tip structure and a second tip structure of the surgical instrument by actuating the sensor of the handle.

162. (New) The system of claim 119, wherein the articulable surgical instrument comprises a shaft coupled to a surgical instrument tip by a wrist joint, the articulable surgical instrument insertable into a patient via an incision such that a first portion of the shaft is outside the patient and a second portion of the shaft is inside the patient; wherein the handle has a sensor and is supported by a linkage, wherein movement of the handle produces rotation of said first portion of the shaft and the second portion of the shaft about an axis of the shaft

extending through the incision, translation of said shaft along the axis, and articulation of said wrist joint, and wherein actuation of the sensor of the handle produces operation of the surgical instrument tip.

REMARKS

Claim 115, 118-126, 138, 141, 161, and 162 are pending. Claims 115 and 119-122 were indicated to be allowable in the Office Action of July 19, 2000 subject to interferences with U.S. Patent Nos. 5,878,193 and 5,855,583. Per a Communication dated September 30, 2002, Decisions in Interference Nos. 104,644 (with the '193 patent) and 104,645 (with the '583 patent) were favorable to the Applicant of the present application, and *ex parte* prosecution is resumed. Hence, claims 115, and 119-122 remain allowable.

Per the Office Action of July 19, 2000, claims 118, 123-126, 138, and 141 were rejected as allegedly being unpatentable over the cited art, while claim 139 was indicated as defining patentable subject matter, but was objected to as depending from non-allowed base claim 138. All of the elements of indicated allowable claim 139 have been incorporated into independent claim 138 from which it previously depended, so that claim 138 is now in condition for allowance. Claim 118 has been amended to depend from claim 138, while claim 123 has been amended to depend from allowed claim 115. Claim 144 has been canceled pursuant to Interference No. 104,643, and claims 124-126 depend from claim 123, which now depends from allowed claim 115.

Applicant notes that claim 28 of sister application 09/602,627 corresponds with amended claim 139. That claim was rejected solely on double patenting grounds in light of current claim 139.

Added claims 161 and 162 depend (directly or indirectly) from allowed independent claims 115 and 119, respectively. Support for these added claims is found throughout the originally filed application, and particularly in Figs. 7, 9, 10, and 11, along with the associated text.

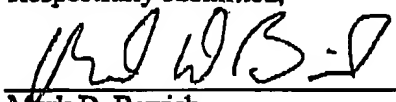
INFORMATION DISCLOSURE STATEMENT

Applicant notes that at least one Information Disclosure Statement will be filed shortly under separate cover, along with associated documents. Applicant intends to have these documents hand-delivered for the convenience of the Examiner, and to expedite issuance of this application.

CONCLUSION

In view of the foregoing, Applicant believes all claims now pending in this Application are in condition for allowance and an action to that end is urged. If the Examiner believes a telephone conference would aid in the prosecution of this case in any way, please call the undersigned at 650-326-2400.

Respectfully submitted,



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PA 3284827 v2

VERSION WITH MARKINGS TO SHOW CHANGES MADE

118. (Amended) The system of claim 138, wherein the input device has a handle, and [**A medical robotic system, comprising:**

a robotic arm;

a coupler that pivotally attaches to the arm;

an endoscopic surgical instrument that is held by said coupler; and

a controller having a handle, the controller in electrical communication with the robotic arm; and]

wherein movement at the input device [**controller**] produces a proportional movement of the [**robotic arm and**] surgical instrument.

123. (Amended) The method of claim 115, further comprising:[**A method for operating a surgical robotic system for performing a surgical procedure on a patient, the method comprising:**]

1) providing a first articulate arm, a controller and an input device which receives input commands, the first articulate arm in electrical communication with the controller and the controller in electrical communication with the input device;

2) cutting at least one incision into a [**the**] patient;

3) attaching the [**a**] surgical instrument to the first articulate arm, the surgical instrument having a shaft supporting the surgical instrument tip;

4) inserting said surgical instrument into the patient through the at least one incision such that a first portion of the shaft is outside the patient and a second portion of the shaft is inside the patient;

5) generating movement [**input**] commands to move said surgical instrument in accordance with a surgical [**the**] procedure being performed, wherein said first articulate arm moves said surgical instrument in accordance with the movement [**input**]commands such that said first portion of the shaft and said second portion of the shaft move; and

6) removing the surgical instrument from the patient.

138. (Amended) A system that allows a user to control a movement of a surgical instrument, wherein the surgical instrument is coupled to a display device that displays an object, comprising:

a mechanism that moves the surgical instrument, said mechanism having an original position and including a first linkage arm coupled to the surgical instrument and a first actuator which can rotate said first linkage arm and the surgical instrument in a plane perpendicular to a first axis, said first actuator being coupled to a linear actuator which can translate said first linkage arm along an axis parallel with the first axis;

an input device that receives a command to move the surgical instrument in a desired direction relative to the object displayed by the display device; and,

a controller that receives said command to move the surgical instrument in the desired direction, computes a movement of said mechanism based on said command and the original position of said mechanism so that the surgical instrument moves in the desired direction, and provides output signals to said mechanism to move said mechanism said computed movement to move the surgical instrument in the desired direction commanded by the user.

Please cancel claim 139.

141. (Amended) The system as recited in claim 138, wherein said controller is a computer which receives input signals from said input device and provides output signals to said controller to move **[the position of]** the surgical instrument.

Please cancel claim 144.

Please add claims 161 and 162 as follows:

161. (New) The method of claim 123, further comprising:

inputting the commands by moving a handle, the handle supported by an input linkage and having a sensor, wherein the surgical instrument comprises an articulable surgical instrument having a wrist joint coupling the shaft to the surgical instrument tip, wherein said

first articulate arm moves said surgical instrument while the first portion of the shaft is outside the patient and the second portion of the shaft is inside the patient by rotating the shaft about an axis of the shaft, by translating the shaft along the axis of the shaft, and by articulating the wrist joint within the patient, the surgical instrument movement proportional with the handle movement; and

operating a joint coupling a first tip structure and a second tip structure of the surgical instrument by actuating the sensor of the handle.

162. (New) The system of claim 119, wherein the articulable surgical instrument comprises a shaft coupled to a surgical instrument tip by a wrist joint, the articulable surgical instrument insertable into a patient via an incision such that a first portion of the shaft is outside the patient and a second portion of the shaft is inside the patient; wherein the handle has a sensor and is supported by a linkage, wherein movement of the handle produces rotation of said first portion of the shaft and the second portion of the shaft about an axis of the shaft extending through the incision, translation of said shaft along the axis, and articulation of said wrist joint, and wherein actuation of the sensor of the handle produces operation of the surgical instrument tip.

COPY OF PENDING CLAIMS

115. A method for allowing a user to remotely control a movement of a surgical instrument having a tip, the method comprising the steps:

a) establishing an original position of the surgical instrument tip;

b) inputting a command provided by a user to move the surgical instrument in a desired direction relative to an object displayed on a display device;

c) computing an incremental movement of the surgical instrument based on the command provided by the user and on the original position of the surgical instrument;

d) moving the surgical instrument in the desired direction so that the surgical instrument tip always moves in a direction commanded by the user.

118. (Amended) The system of claim 138, wherein the input device has a handle, and

wherein movement at the input device produces a proportional movement of the surgical instrument.

119. A medical robotic system, comprising:

a robotic arm;

a coupler that pivotally attaches to the arm;

an endoscopic surgical instrument that is held by said coupler; and

a controller having a handle, the controller in electrical communication with the robotic arm; and

wherein movement at the controller produces a proportional movement of the robotic arm and surgical instrument, and wherein said endoscopic surgical instrument is an articulable endoscopic surgical instrument.

120. A medical robotic system, comprising:

a robotic arm;

a coupler that pivotally attaches to the arm;

an articulable endoscopic surgical instrument that is held by said coupler; and

a controller having a handle, the controller in electrical communication with the robotic arm; and

wherein movement at the controller produces a proportional movement of the robotic arm and the articulable surgical instrument, and wherein the articulable surgical instrument comprises a base, a pivot linkage, and a distal end.

121. The system of claim 120 wherein a movement at the controller results in corresponding movement of the distal end of the articulable surgical instrument relative to the base of the articulable surgical instrument.

122. The system of claim 121 wherein a cauterizer is attached at the distal end of the articulable surgical instrument.

123. (Amended) The method of claim 115, further comprising:

1) providing a first articulate arm, a controller and an input device which receives input commands, the first articulate arm in electrical communication with the controller and the controller in electrical communication with the input device;

2) cutting at least one incision into a patient;

3) attaching the surgical instrument to the first articulate arm, the surgical instrument having a shaft supporting the surgical instrument tip;

4) inserting said surgical instrument into the patient through the at least one incision such that a first portion of the shaft is outside the patient and a second portion of the shaft is inside the patient;

5) generating movement commands to move said surgical instrument in accordance with a surgical procedure being performed, wherein said first articulate arm moves said surgical instrument in accordance with the movement commands such that said first portion of the shaft and said second portion of the shaft move; and

6) removing the surgical instrument from the patient.

124. The method of claim 123 wherein said surgical instrument is a grasper.

125. The method of claim 123 wherein the surgical instrument is a cauterizer.

126. The method of claim 123 wherein the surgical instrument is a cutting blade.

138. (Amended) A system that allows a user to control a movement of a surgical instrument, wherein the surgical instrument is coupled to a display device that displays an object, comprising:

a mechanism that moves the surgical instrument, said mechanism having an original position and including a first linkage arm coupled to the surgical instrument and a first actuator which can rotate said first linkage arm and the surgical instrument in a plane perpendicular to a first axis, said first actuator being coupled to a linear actuator which can translate said first linkage arm along an axis parallel with the first axis;

an input device that receives a command to move the surgical instrument in a desired direction relative to the object displayed by the display device; and,

a controller that receives said command to move the surgical instrument in the desired direction, computes a movement of said mechanism based on said command and the original position of said mechanism so that the surgical instrument moves in the desired direction, and provides output signals to said mechanism to move said mechanism said computed movement to move the surgical instrument in the desired direction commanded by the user.

141. (Amended) The system as recited in claim 138, wherein said controller is a computer which receives input signals from said input device and provides output signals to said controller to move the surgical instrument.

161. (New) The method of claim 123, further comprising:

inputting the commands by moving a handle, the handle supported by an input linkage and having a sensor, wherein the surgical instrument comprises an articulable surgical

instrument having a wrist joint coupling the shaft to the surgical instrument tip, wherein said first articulate arm moves said surgical instrument while the first portion of the shaft is outside the patient and the second portion of the shaft is inside the patient by rotating the shaft about an axis of the shaft, by translating the shaft along the axis of the shaft, and by articulating the wrist joint within the patient, the surgical instrument movement proportional with the handle movement; and

operating a joint coupling a first tip structure and a second tip structure of the surgical instrument by actuating the sensor of the handle.

162. (New) The system of claim 119, wherein the articulable surgical instrument comprises a shaft coupled to a surgical instrument tip by a wrist joint, the articulable surgical instrument insertable into a patient via an incision such that a first portion of the shaft is outside the patient and a second portion of the shaft is inside the patient; wherein the handle has a sensor and is supported by a linkage, wherein movement of the handle produces rotation of said first portion of the shaft and the second portion of the shaft about an axis of the shaft extending through the incision, translation of said shaft along the axis, and articulation of said wrist joint, and wherein actuation of the sensor of the handle produces operation of the surgical instrument tip.